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ABSTRACT

This document contains three papers from a symposium on recruitment and training. "College Choice: The State of Marketing and Effective Student Recruitment Strategies" (Fredrick Muyia Nafukho, Michael F. Burnett) reports on a study of the recruitment strategies used by Louisiana State University's admissions office and College of Agriculture that identified student financial aid, geographic location, mail sent to prospective students, campus visitation programs, and outreach programs as the most efficient student recruitment practices. "The Perceived Influence of Industry-Sponsored Credentials on Recruitment and Training in the Information Technology Industry" (Kenneth R. Bartlett, T. Marshall Egan, Minu Ipe, Sujin Kim, Yuwen Liu) summarizes a study in which a sample of 33 senior human resource executives from large U.S. firms and 423 of their information technology (IT) employees were surveyed regarding the influence of industry-sponsored credentials on recruitment and training in the IT industry. "The Role of Training and Development in Newspaper Recruitment Advertisements" (Kenneth R. Bartlett, Harriett R. Porter) discusses a study that compared newspaper job advertisements from three major U.S. metropolitan areas for 1-week periods in 1991 and 2001 to determine whether the use of references to training and development as a benefit of employment is increasing. All three papers include substantial bibliographies. (MN)

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Recruitment and Training

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College Choice: The State of Marketing and Effective Student Recruitment Strategies

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The study examined recruitment strategies employed by Louisiana State University admissions offices and the College of Agriculture. Student financial aid, geographic location, mail pieces sent to prospective students, campus visitation programs and outreach programs were the most efficient factors in student recruitment. These factors had positive correlations with enrollment and were statistically significant at .05 level. HRD researchers could use the findings to save dollars in recruiting students who meet the mission of their programs.

Keywords: Marketing Education, College Choice, Student Recruitment

During the past 350 years, colleges and universities in the US have grown to over 3,100 baccalaureate-granting institutions, each with its own unique purpose, history, student body and faculty (Cerny, 1992, p.1). Prior to the mid - 1960's, student enrollment grew without much recruitment efforts from higher education institutions (Hossler, 1986 and Sevier, 1989). The higher education industry witnessed increased student enrollment after World War II until 1980. This growth was due to the baby boom generation (Boyer, 1987). For the period ranging from 1975 to 1985, demographers projected a steady decline in the number of traditional college age students. This decline led to the enrollment crisis of the 1980's (Novak and Weiss, 1985). In response to this crisis, in December 1983, the College Board and Educational Testing Service conducted a study to better understand the enrollment practices of colleges across the country. College admissions officers' responses showed that the most frequently mentioned problems were: too few students to apply, too few accepted students enroll and too many students drop out (Novak and Weiss, 1985, p.2). For admission offices to be successful in their recruitment efforts today and in the future, they must use a growing knowledge base to guide their recruitment programs. There is need for the analysis of the huge student databases in order to understand student characteristics. The HRD professionals teaching in the universities should provide customer-capital services to their departments and colleges by helping in designing effective marketing strategies (Edvinsson and Malone, 1996). As noted, the business success of colleges and programs offered will depend upon "selling what the customer (student) wants to buy" (Rothwell &Sredl, 1992, p. 135; Albrecht & Bradford, 1990, p. 1). HRD professionals as facilitators of learning, have an obligation to students, the colleges they serve, and themselves to help their customers avoid making costly purchases that do not help improve organizational, group or individual effectiveness in terms of higher completion rates (Rothwell & Sredl, 1992).

Problem Statement and Purpose

The concern for having the optimal number of students is now more pronounced than it was in the 1980's and 1990's. Faced with competition and limited financial resources, colleges are using several recruitment tactics to attract students. But to attract the required number of students and save dollars allocated to student recruitment, efficient recru itment strategies must be employed. Every college must develop its own unique selling points. An understanding of student college choice decision-making is therefore critical in designing of unique selling points. This understanding is in line with investment in customer-capital. While designing recruitment strategies at the college level, it is important to understand what motivates students to choose a given college. On the lack of data about student characteristics in many colleges, Brodigan and Dehne (1997) noted: "We find it strange how little most colleges know about the opinions, expectations, and satisfaction of current students" (p.18). Human Resource Development professionals as marketers should use their marketing skills to research into the issue of college and program choice to develop innovative programs. The main purpose of this study was to describe the fall 1997 prospective freshmen in the Louisiana State University College of Agriculture based on the main recruitment

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strategies employed by Louisiana State University's admissions offices and the College of Agriculture. The study also aimed at identifying the recruitment factors that had the highest association with college enrollment status.

Theoretical Framework

The language of marketing was introduced into higher education admissions no more than a decade ago, but colleges and universities have applied basic marketing techniques throughout their history to curricular planning and assessment (Ihlanfeldt, 1980). Marketing as applied to higher education is a concept that allows college decision makers to think systematically and sequentially about the mission of the organization, the services it offers, the markets it currently serves, and the extent to which these same markets and possibly new ones may demand its services in the future (Ihlanfeldt, 1980, p.13). Higher education and HRD practitioners in particular, deal with an intangible product that is more of a service than a commodity (Salee and Johnson, 1994). HRD researchers therefore need to be more careful when they apply marketing concepts to education. There is always some difficulty when it comes to quantifying intangible services such as education. Marketing can, however, enable college management and HRD program designers to determine whether their missions match student interests. Knight (1981) suggests that marketing is consistent with many ideas in higher education when it is understood and applied appropriately. In the 1970's and 1980's when the reality of declining students could no longer be denied, more astute college administrators recognized that marketing meant more than selling. It involved strategic decisions in other areas as well and the shift toward adopting more customer-oriented perspective began to surface in many institutions (Losher and Miller, 1983, p.9).

Kotler (1975, p.5) defines marketing as the analysis, planning, implementation, and control of carefully formulated programs designed to bring about voluntary exchange of values with target markets for the purpose of achieving organizational objectives. It relies heavily on designing the organization's offering in terms of the target market's needs and desires and on using effective pricing, communication and distribution to inform, motivate and service the markets. In higher education, Johnson (1979) observes that marketing tries to give first consideration to the student and societal needs. Losher and Miller (1983) note that one of the basic assumptions of an effective marketing program is that an institution is committed to the philosophy that colleges are in the people business and inflexible decision makers must yield to the needs of the consumers, the students, if they want to recruit them. Although marketing in higher education is mainly associated with promotion and recruitment, Johnson (1979), emphasizes that the scope of an effective marketing program should be more comprehensive and must include research, planning, communication and evaluation. Cox (1980) and Lovelock (1980) argue that marketing should be looked at as a total institutional concept, which integrates trustees, faculty, administration and staff efforts into a cohesive team approach. Rothwell and Sredl (1992) note that marketing is important to HRD field since people (students) can't benefit from products or services that are unsuitable or those they know nothing about. Therefore, when colleges market their products and services, they must tailor planned learning experiences to suit the needs of the learners they serve and to alert learners to products and services that are already offered (p. 136). Walton (1999) observes that HRD professionals as marketers should help enrollment admission officers by selling training and development view points, learning packages, programs and services to target audiences outside universities.

Methodology and Research Design

The Target Population

The target population for this study was defined as all prospective freshmen that were recruited to attend the College of Agriculture at LSU in the fall of 1997. The accessible population consisted of fall 1997 prospective freshmen who resided on both the undergraduate and college databases. The university undergraduate data base houses all undergraduate admissions contacts with students and is based upon a coding system with different contacts represented by a series of numbers corresponding to specific recruitment contact such as letters, telephone calls and events. The College of Agriculture data base equally houses all undergraduate admissions contacts with students and is based upon a coding system with different contacts such as: TAger Day, telephone, WWW, and attendance at 4-H and FFA functions.

The accessible population from which the sample was drawn consisted of students who resided on both the university admissions database and the College of Agriculture database. The minimum required sample size for the study was determined using Cochran's (1953) sample size formula for categorical data with an a priori established alpha level of .05, an acceptable margin error set at 5% and the estimate of the variance in the population set at .25 (the most conservative estimate of variance calculated as p times q). A comparison of 1,130 students who resided

on the College of Agriculture's 1997 high school senior data base, with the university undergraduate recruitment data base gave a total of 226 students. This formed the accessible population of the study. From the accessible population, the actual sample size was determined to be 143. Since complete data on all the variables for all the subjects in the accessible population were obtained, all 226 subjects in the accessible population were included in the study instead of the 143 subjects.

Instrumentation and Data Collection

A computerized recording form was the main instrument used for data collection in this study. Specific variables from both the university undergraduate admissions database and the College of Agriculture admissions database were selected. The variables selected were those that addressed the objectives of the study. A file was established into which the variables were systematically copied. Data was collected during the spring and summer semesters of 1998 by copying over 70 variables of interest from the university's undergraduate admissions data base and another 27 variables from the College of Agriculture's admissions data base. Each student was drawn using his or her social security number.

Data Analysis

Data collected in this study was analyzed using the following procedures for each respective study objective. Objective one was to describe the Fall 1997 prospective freshmen in the Louisiana State University College of Agriculture based on the main recruitment strategies emp loyed by Louisiana State University's admissions offices and the College of Agriculture. Since this objective was descriptive in nature it was analyzed using descriptive statistics. The variables that were measured on a categorical (nominal and ordinal) levels were summarized using frequencies and percentages in categories. Variables that were measured on interval or higher scale of measurement were summarized using means and standard deviations. The second objective aimed at identifying the recruitment strategy that had the highest association with college of Agriculture enrollment status among students recruited for admission to the college. This objective was accomplished by using zero order correlation coefficients. Before the correlations were determined, the researchers checked for the presence of multicollinearity by regressing each independent variable on all the other independent variables. This technique takes into account the relationship of each independent variable with all the other independent variables and a combination of other independent variables (Lewis-Beck, 1980). The variables that had high R^2 were removed from the analysis. The dependent variable enrollment was correlated with independent variables studied.

Results and Findings

The study was designed to answer one major question: Which recruitment strategy had the highest association with student enrollment during the year of investigation. There are numerous points in the recruitment of a student to attend the university that are either a mail strategy in and of themselves or cause the generation of a piece of mail to the student as a follow-up of the activity. Examples of these include invitations to attend selected activities, follow-up notes thanking the student for their participation in selected activities, and letters acknowledging receipt of pieces of information such as ACT scores, application, etc. The total number of mail pieces sent to prospective students by the university admissions office and the College of Agriculture ranged from a low of 2 to a high of 15. The average number of Mail pieces sent was 7.48 (SD = 2.498) for students in the study. The largest group of students (n = 35, 16%) in the study received a combined total of 7 pieces of mail from the university admissions office and the College of Agriculture. This was followed by another 30 (13%) who received six pieces of mail. The second recruitment strategy examined was financial assistance. Of the students who received scholarships, the highest number of scholarships received by any one student was (n = 7, 4.5%), while 33 (21%) of the students received only one scholarship. Out of 226 subjects studied, 154 (68%) received scholarships. While the remaining 72 (32%) of the students in the accessible population never received any form of financial assistance. To further examine financial aid as a factor in recruitment, the total dollar amount of the financial assistance awarded to the subjects in the study was measured. The students who received scholarships, the largest group (n = 24, 16%) was in the amount range from $ 9000 to $ 9999. The next largest group of students was in the $ 2000 to $ 2999 range of scholarship amounts (n = 21, 145). The mean amount of scholarship awarded was $ 6263.18.

The third recruitment strategy examined was campus visitation programs. This was operationally defined as Preview LSU, Tiger Day, TAger Day, and Campus Tour. TAger Day is the College of Agriculture recruitment program in which high school seniors and juniors are invited to attend the College of Agriculture open house in the

spring of the year. Tiger Day, the largest Louisiana State University recruitment program is administered by the university admissions office. Approximately 30,000 high school seniors and juniors are invited to attend the Campus Open house in the fall of every year. Preview LSU is a program in which high achieving students are invited to participate in a day and a half program on the LSU campus. The program aims at giving students an in depth look at the program opportunities offered at Louisiana State University (Harris, 1997). The Campus Tour recruitment activity involves the Monday through Friday Admissions Session and student guided tour of the campus. Forms for application are readily accessible from the admissions office and LSU web page for students to complete and mail back. As a recruitment strategy, LSU admissions office encourages visits from students and parents at all occasions. Table 1 shows that 162 (72%) of the students in the study were invited to attend Tiger Day during their senior year and 38 (17%) of the them attended. It is shown further that 60 (27%) of the students were invited to attend Tiger Day in their junior year and 5 (2%) of the students came to the event. For the TAger Day program, which is a similar activity just for the College of Agriculture, 48 (21%) of the students participated in the program.

Table 1. *Invitation to and Attendance at Campus Visitation Programs for Prospective Freshmen*

Program	Invited	Attended	Not Attended
Tiger Day (Sr.)	162 (72%)	38 (17%)	188 (83%)
Tiger Day (Jr.)	60 (27%)	5 (2%)	221 (98%)
TAger Day	NA	7 (1%)	223 (99%)
Tour	NA	48 (21%)	178 (79%)
Preview LSU	26 (12)	7 (3%)	219 (97%)

In the case of the Preview LSU program, 26 (12%) of the subjects were invited to attend the program and 7 (3%) actually participated in the program. Finally, 48 (21%) of the subjects participated in a campus tour while the remaining 178 (79%) of the Fall 1997 prospective freshmen recruited to attend the College of Agriculture did not participate in a formal guided tour of the LSU campus. The fourth recruitment strategy examined was Outreach programs by both the university admissions office and the College of Agriculture. As seen in Table 2, the highest outreach program attended was the Explore program in the student's senior year with 112 (50%) invited and 20 (9%) attending the program. This was followed by the Explore LSU Program in the students' junior year of High School with 41 (18%) invited and only 6 (3%) attending the program.

Table 2. *Invitation to and Attendance at Outreach Programs for Prospective Freshmen*

Program	Invited	Not Invited	Attended	Not Attended
Explore LSU (Sr.)	112 (50%)	114 (50%)	20 (9%)	206 (91%)
Explore LSU (Jr.)	41 (18%)	185 (82%)	6 (3%)	220 (97%)
Explore LSU	8 (4%)	218 (96%)	4 (3%)	222 (98%)

In the case of College of Agriculture outreach programs, data in Table 3 show the highest event attended was Explore College of Agriculture program with 17 (8%) of the subjects attending. College explore programs included explore programs held in Texas, Alexandria, Shreveport, Slidell, Houma and De Ridder. The College of Agriculture recruitment personnel attend these explore events and initiate contacts with the prospective students for the college. The other important outreach recruitment activities carried out by the College of Agriculture included Local - 4H. Eight (4%) of the students were initially contacted during the 4-H outreach functions, five (2%) were contacted by the College of Agriculture staff during the State FFA judging competition and another 5 (2%) of the prospective students were contacted by the college staff during Local FFA judging competition. Telecounseling was the other recruitment strategy examined. This strategy involves the prospective student receiving a telephone call from an LSU Ambassador and or College of Agriculture recruitment personnel. All students who receive a Tiger Call also receive a piece of correspondence, even if no direct contact is made.

Table 3. *Attendance at Outreach Programs for Prospective Freshmen*

	Attended	Not Attended
State FFA judge	5 (2%)	221 (98%)
Local - 4H	8 (4%)	218 (97%)
Local FFA	5 (2%)	221 (98%)
Explore	17 (8%)	221 (98%)

Data in Table 4 show that 104 (46%) of the students were contacted on the first call. Another 30 (13%) received the message left with a member of the family and returned the call. Twenty-eight (12%) of the students were called and a message was left, but they never responded to the message left with a member of the family. Table 4 shows further that 64 (28%) of the subjects were not contacted by telephone by either the university admissions office or the College of Agriculture recruitment personnel.

Table 4. *Tiger Calls Made to Students and the Response Reported*

Tiger Call Made	N	%
Student conducted on first call	104	46.0
Message left and student returned the call	30	13.3
Never answered message	28	12.4
Never Received call	64	28.3
Total	226	100.0

The final recruitment strategy examined in the study was the use of the Internet. Louisiana State University has established a web page that contains programs offered by colleges and departments. Application procedures are also provided on the LSU home page. A prospective student interested in a particular program can initiate the first contact with the university admissions office and the College of Agriculture using the Internet. This is a very new and recent recruitment strategy. Only 2 (1%) of the students used the Internet to initiate their first contact with the College of Agriculture. The remaining 224 (99%) of the subjects in the study did not employ this recruitment strategy.

The recruitment strategy that had the highest association with the dependent variable enrollment status among the students recruited to attend the College of Agriculture during the 1997 - 98 academic year, was considered as the strategy that had the highest zero order correlation with the dependent variable, enrollment status. The most appropriate correlation coefficient was established between the dependent variable enrollment status, and each recruitment strategy. Data in Table 5 show that the independent variable, the total dollar amount awarded to the students from the various financial aid sources, had the highest correlation with enrollment ($r = .48$; $n = 226$; $p = <.001$). The variable SCHOLAR (whether the student received a scholarship or not) had the second highest correlation with enrollment ($r = .46$; $n = 226$; $p = <.001$). In addition, the variables that had positive significant correlations with enrollment included STATE (defined as whether the student recruited was from within the state of Louisiana or not), $r = .40$; ($n = 226$; $p = <.001$) and PLUS (defined as whether the student received a parent loan for undergraduate student award or not) was also significant with $r = .31$; ($n = 226$; $p = <.001$). The other independent variables that had positive and significant correlations with the dependent variable are whether or not the student received a departmental scholarship, whether or not the student received an award from any private sources, whether or not the student received an unsubsidized Stafford loan, and whether or not the student was awarded a Federal Pell grant. The entire results of the correlations between the independent variables and the dependent variable are presented in Table 5.

Table 5. *The Correlation Between Recruitment Strategies and Enrollment (N=226)*

Variable	n	r	p
Dollar amount awarded in scholarship	226	.484	<.001
Scholarship received	226	.458	<.001
Whether or not student came from Louisiana State	226	.399	<.001
Parent Loan for Undergraduate students	226	.313	<.001
Departmental Scholarship	226	.297	<.001
Private or outside award	226	.268	<.001
Unsubsidized Stafford loan	226	.262	<.001
Federal Pell Grant	226	.253	<.001
Tuition Assistance Program	226	.245	<.001
Subsidized Stafford Loan	226	.244	<.001
Tiger day invitation for senior high school students	226	.239	<.001
Packet sent to student on receiving ACT scores	226	.220	<.001
Student received Rockefeller Scholarship	226	.153	.021
High school activity award	226	.153	.021
College work study program	226	.148	.026
Packet sent to o n receiving SAT scores	226	-.141	.034
Student participated in campus tour session	226	.141	.035
Tiger day invitation sent of junior high school students	226	.131	.049
State Vocational rehabilitation scholarship	226	.127	.057

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Invitation sent to seniors students to attend Explore LSU	226	.125	.061
Letter sent to seniors after attending Tiger day	226	.120	.073
Attendance of College of Agriculture Explore programs	226	-.117	.080
Came to campus for a visit	226	.110	.099
Received Chancellor's student aid	226	.105	.115
Invited to a reception for scholarship eligible students	226	.063	.346
Attended a reception for scholarship eligible students	226	.062	.353
Received a call from LSU ambassador	226	-.057	.395
Received Tuition honors scholarship (among top 5 %)	226	.056	.405
Tuition, room or board award	226	.052	.433
Number of mail pieces received from College	226	.048	.478
Invited to College open day	226	.019	.775
Invited to LSU on campus Explore	226	.017	.805
Met college recruiter during FFA judging competition	226	.015	.823
Number of mail pieces received by a student from admissions	226	-.011	.871
Invitation sent to students to attend LSU Preview program	226	-.008	.910
Received recruiting brochure from college of Agriculture	226	-.008	.910
Packet sent to students list purchased from ACT Inc.	226	.002	.978
Tiger call message left for the prospective student	226	.002	.971
Student attended State Literary Rally	226	.001	.985

Conclusion and Recommendations

Financial Aid is an important recruitment strategy and has an effect on the enrollment status of students. This conclusion is based on the findings that the dollar amount awarded to the students in this study had the single highest correlation of any of the variables tested($r = .484$, $n = 226$, $p < .001$). Also, the variable whether or not the student received a scholarship, which is still part of financial assistance had a substantial correlation with enrollment status ($r = .458$, $n = 226$, $p < .001$). This conclusion is also supported by earlier research which showed that financial aid has in the past been used by colleges as one of the most effective recruitment strategies (Harris, 1997; McPheson and Schapiro, 1995; Hossler, 1994; Rosiak, 1987; Swann, 1987).

The researchers recommend that directors of financial aid and enrollment management professionals who have the responsibility for setting scholarship policy should carefully examine financial award process to ensure financial assistance goes to the students who need this assistance. As shown in this study, offering of a complete scholarship to a student or several awards to one individual student increases the total dollar amount which in turn influences the student's decision to enroll in the college. The highest number of students in the study who received financial aid fell into the range of $ 9000 to $ 9999. As established earlier by Harris (1997), the amount of monies awarded in the scholarship offer was the best method to recruit high ability students. The mean ACT score for the subjects in this study was 24.99 implying that the college admitted high ability students. To better understand how the dollar amount awarded to students influences their decision to attend a given college, the researchers recommend the need to carry out a qualitative study of students recruited to attend the college and awarded financial assistance. This will provide individual information on the role financial aid played in influencing student decisions to enroll in the college. The geographic location of the student is an important factor in recruitment. Whether or not the student came from the state of Louisiana had an effect on the enrollment status of a student. This is based on the findings that the variable state had a positive and statistically significant correlation with enrollment ($r = .399$, $n = 226$; $p < .001$). Since the variable state (student coming from within state) was highly significant in this study, the researcher recommends a qualitative study that will focus on the reasons why students from within the state of Louisiana choose to attend LSU.

The total number of mail pieces sent by the college to prospective students is an important recruitment strategy and has an effect on the enrollment status of a student at the college level. This conclusion is supported by earlier research, which established that direct mail is one of the most effective recruitment strategies (Affleck, 1991; Sanders and Perfetto, 1991; Wheatley, 1987; Rosiak, 1987; Lewis, 1985; Smith, 1985; Porter, 1986). Harris (1997) in a more recent study at LSU established that mail was an important recruitment strategy at the university level. In this study however, mail sent by university admissions office to students recruited by the College of Agriculture was not found to be a significant factor. This could be explained by the fact that prospective students who establish initial contacts with the college may have more interest in contacts from the college (especially dean's office) instead of the general mail from the university admissions office.

Campus visitation programs specially designed for prospective freshmen by the College of Agriculture and the university admissions office are essential recruitment activities. Despite the fact that attendance to campus visitation programs had lower percentages, the variables, Tiger Day senior (17%), Tiger Day juniors (2%), TAger Day (1%),

Tour (21%), and Preview LSU (3%). The variables Tour, Tiger Day senior attendance, TAger Day and Preview LSU entered the comprehensive, comprehensive recruitment and the most efficient recruitment models. Recruitment via the Internet is equally a new phenomenon in the field of college recruitment. This variable tends to be impersonal as there is no direct personal contact with the prospective student (Stoner, 1996). The researchers however recommend for further study that will explore the effectiveness of using Telecounseling and the Internet in recruiting students.

Implications for the Field of HRD

This study provides useful information regarding effective strategies for recruiting college students. HRD professionals as marketers should find the results of this study useful in identifying the needs of HRD's chief "customers"- that is learners. The marketing framework employed in this study should help in identifying and promoting planned learning experiences as a way of recruiting students who meet the mission of various colleges and HRD programs countrywide. Designing efficient recruitment strategies is one important way of understanding the needs of the learners during the recruitment stage. This study in particular, shows the most effective recruitment strategies employed by Louisiana Sate University admissions' offices and College of Agriculture. HRD researchers interested in marketing their programs and recruiting students who meet the mission of their programs should find the results of this study useful.

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The Perceived Influence of Industry-Sponsored Credentials on Recruitment and Training in the Information Technology Industry

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As the interest in industry-sponsored credentials grows, so do questions on the influence of these credentials on both the employee and employing organization. Perceptions of the influence of industry-sponsored credentials in the information technology industry are examined in this study of senior human resource executives and their IT employees from a sample of U.S. large firms. Further analysis examined differences in perceptions of the influence of credentials on recruitment and training between IT employees with and without industry-sponsored credentials.

Keywords: Information Technology, Recruitment, Training.

The increasing recognition that information technology (IT) represents the most significant enabling technology for organizations has considerable implications for human resource development (HRD). According to a report from the U.S. Department of Commerce (1999), IT allows for better management of information and innovation; has resulted in improved productivity and quality of life; and has improved the national standard of living. The creation, application, and use of information technology has spilled over into every sector of the economy, from the traditional IT industry, to manufacturing and services, transportation, healthcare, education, and government. From an HRD perspective, it is noted that IT changes not only the workplace but also the learning that is required to maximize human performance and corporate success (Marquardt & Kearsley, 2000).

There is little doubt that the IT industry has risen to prominence and is playing a dramatic and significant role in the U.S. economy. The use of IT has not only led to increased efficiency and productivity, but it has also resulted in new business models and new approaches to the organization and completion of work. The demand for skilled IT employees remains high despite the recent slowdown in the economy and the demise of many dot.com firms and other Internet related businesses (Hilton, 2001). A recently published Information Technology Association of America (ITAA) study (2001) stated that although demand for IT workers is down 44% from forecasts just a year earlier, estimates are that U.S. companies plan to hire an additional 900,000 IT workers during 2001.

At the same time that tremendous expansion in IT career opportunities has occurred, and is projected to continue, the pace at which new two-and four-year postsecondary graduates in computer science, engineering, and mathematics entering the workforce has shown no signs of increase and may even have slowed down. The situation is so serious that the U.S. Department of Commerce (1997) issued a warning that the shortage of IT workers could undermine U.S. innovation, productivity, and competitiveness in world markets due to factors such as the inhibition of cutting-edge technology, constrained industry growth, loss of trade, and increased labor costs. As a result of projected IT workforce shortages the IT industry, and firms dependent on IT workers, are examining a variety of strategies related to recruitment and retention. Recruiters are looking beyond the traditional pool of graduates for new workers in addition to seeking ways to attract and recruit employees from the non-IT related incumbent workforce.

Employers have tried to fulfill their need for IT resources by aggressive recruiting (including offering very attractive salary and benefit packages) from the domestic market, training and skill updating of their existing IT workforce, and hiring immigrant workers with IT skills through the H1B visa program. However, the gap between supply and demand remains. As a result, focus on alternative educational pathways to provide IT workers with the needed key technical skill sets has been renewed (Adelman, 2000). In this scenario, credentials offered by industry-based groups are providing organizations with qualifications on which to make decisions related to recruiting and

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training of IT employees.

Problem Statement

The rise in the number of credential and certification programs is one the most significant trends related to education for IT careers. A credential is defined as "a designation, mark, or stamp given to a person, organization, or program that has satisfied a set of standards" (Hale, 2000, p. xx). A certification is a form of credential awarded by an employer, a vendor, or an association or independent agency requiring passage of an exam benchmarked to predetermined occupational or professional standards that may or may not also require prior education and experience (Carnevale & Desrochers, 2001; Hale 2000).

Industry-sponsored credentials and certifications were developed to update the skills of well-trained workers and to address the shortage of qualified employees within the IT industry. IT industry-sponsored credentials (such as CompTIA A+, Microsoft Certified Systems Engineer, Certified Novell Engineer, Sun Certified Programmer for the Java Platform) have the advantage of enabling people to quickly learn a clearly defined set of competencies. Upon completion of a credential, many employees find that current market demand provides them multiple hiring opportunities. Yet, the influence of IT credentials in recruitment and training is largely unknown. This study addresses this issue.

Theoretical Framework

This section reviews literature in the different fields that contribute to the framing of this study. The aim of this review is to highlight issues and research findings of significance to the current study rather than provide an exhaustive review of the literature. Much existing economic and education theory and research rests on the role and impact of qualifications and credentials as the key to workplace success and higher levels of earnings. As Wonacott (2000) detailed, the most prominent credentials for explaining differences in workplace attainment are the traditional educational credentials of diplomas and degrees. However, a new trend is emerging raising many questions about the current and future role of both these traditional credentials and the more recently developed industry-sponsored credentials and certification.

Cervero (2001) recently listed the rise in credential programs, and their frequent connection to regulation of professional practice, as one of the top five trends in continuing professional education. Bassi (1999) suggested that organizations offering for-profit training and credentials are expanding to fill the growing need for highly skilled workers in corporate America. Argentsinger (2001) described credentials as being faster, cheaper, and more focused than traditional college credentials, resulting in industry-sponsored credentials becoming the continuing-education currency of choice. This trend has produced a delivery system for credentials and certificates that is "a labyrinth of for-profit and not-for-profit postsecondary institutions, professional, industry, and trade associations, commercial vendors, and government" (Carnevale & Desrochers, 2001, p. 26).

Perhaps no other industry has experienced the growth in credentials to the extent of the IT industry which now offers well over 100 industry-sponsored credentials (www.certmag.com). It is important to recognize that credentials extend far beyond the companies and organizations that create and maintain credential programs. Tittel (2001) described the size of the billion dollar per year "certification aftermarket" of testing centers, IT training companies, publishing companies, practice test vendors, credential authorities, online mentoring, and resource providers. IT credential programs appear to achieve multiple aims for both individuals and organizations. Most importantly credential programs provide employees, either looking to enter or to advance within the IT industry, with focused training (Adelman, 2000). IT credentials and certificates also enable people to learn a clearly defined set of competencies that are frequently tied to hiring opportunities (Carnevale & Desrochers, 2001). However, not just entry-level employees benefit from industry-sponsored IT credentials. Firms frequently tie promotion to the receipt of advanced level credentials involving job-related knowledge and experience. At the organizational level, industry-sponsored credentials are believed to play an important role in the determination of desired knowledge, skills, and abilities for IT employees. Requiring credentials and certifications specifically related to a job is said to make the recruitment process more efficient, and aid in assessments of applicant's ability and influence decisions related to participation in firm-sponsored training (Ray & McCoy, 2000).

Regardless of the disagreement in the aims of IT credentials, a situation has emerged in which IT professionals, human resource (HR) executives, and trainers struggle with credentials while "the certification frenzy swirls about them" (Ray & McCoy, 2000, p.1). The recent development and rise in status of IT industry-sponsored credentials raises many questions in terms of their role as signaling devices for hiring, promotion, training and career development. Furthermore, it is not known what the value and impact of IT industry-sponsored credentials is for

both individuals and organizations. Despite the importance of recruitment and training to the IT profession, comparatively little research has been conducted in this area (Agarwal & Ferratt, 1998).

The perceived influence of different types of educational qualifications is an issue of great concern within the IT industry in light of the proliferation of industry-sponsored credential and certification programs. Despite potential reliability concerns, various IT-related firms highlight their own research into organizational results when comparing certified IT employees to those without credentials (IBM, 1999; IDC Incorporated, 1999; Lewis, & Sappington, 1993; The Computing Technology Industry Association, 2001). These studies suggest that managers view employees with credentials to possess greater knowledge, to be more productive, to provide improved customer support, and to have higher commitment while concurrently requiring less training investment (IDC, Incorporated, 1999). A study of IBM certification found positive influences on measures of business results such as increased revenue, employee productivity, and customer satisfaction from employees who hold IBM credentials (htttp://www1.ibm.com/certify/program/roistudy.shtm). An alternative view would support that a college qualification would be more highly valued than a credential offered by industry with existing research suggesting that a college baccalaureate degree is the most marketable qualification (Brown, 1999).

Existing theory provides a strong conceptual framework for examining the role of industry-sponsored credentials and certification in recruitment and training for IT workers. In terms of recruitment, qualifications and credentials have long served as signals for organizations. Signaling theory (Spence, 1972) suggests that because organizations have incomplete information regarding the knowledge, skills, and abilities of applicants, inferences are made by employers through the interpretation of qualifications and credentials presented by applicants (Barber, 1998). Prospective employees communicate to organizations, in part, by utilizing credentials as signals of their expertise and potential. This study examined the perceived influence of different qualifications and credentials on the recruitment and training process from both the employer and employee perspective. The value that organizations place on different qualifications can also act as a signal to applicants. For example, signaling theory suggests that organizational preferences for either IT industry-sponsored credentials or more traditional two or four-year college qualifications provide applicants with information about what it would be like to be a member of that organization and what type of skills and knowledge they value (Greening & Turban, 2000). Drawing on this theory, the current study examined the perceptions of HR executives and IT employees on the differences between industry-sponsored credentials and traditional college qualifications on influencing recruitment decisions for IT employees.

In addition to the signaling role for entry into an organization, qualifications and credentials also have served as a foundation for advancement and employee development decisions. Turner (1960) suggested that career mobility operates under two opposing systems—contest-mobility and sponsored-mobility. Under the sponsored-mobility system, select employees receive high levels of support, guidance, training, and mentorship from supervisors, whereas, the contest-mobility system implies an open and fair contest for each promotion decision. The contest-mobility system assumes that employee success is the result of level of effort, abilities, as well as the level of education and training. The current study adopted the contest-mobility approach in examining the perceptions of HR executives and IT employees towards training. Based on the contest-mobility approach, it was assumed a priori that these two employment categories would have different perceptions towards the influence of industry-sponsored credentials in ongoing training for IT employees. More specifically, it was thought that both HR executives and IT employees would perceive different benefits of having industry-sponsored credentials as compared to a college degree in terms of how this would influence their attitudes towards training. Given the lack of existing research the nature of this difference was not hypothesized and an exploratory approach was taken to this research question.

Research Questions

The core research question guiding this study was: what are the perceptions of HR executives and affiliated IT employees regarding the influence of IT industry-sponsored credentials on recruitment and training? This broad question was refined into three research questions.

Research Question 1: Do differences exist in the perceptions of HR executives as compared to IT employees on the benefits of industry-sponsored credentials on recruitment?

Research Question 2: Do differences exist in the perceptions of HR executives as compared to IT employees on the benefits of industry-sponsored credentials on training?

Research Question 3: Do differences exist in the perceptions of the role of industry-sponsored credentials on recruitment and training between IT employees with industry-sponsored credentials as compared to IT employees without industry-sponsored credentials?

Method

This study collected data from HR executives and incumbent IT workers to explore and compare differences in perceptions among employers and employees toward the influence of industry-sponsored credentials. These two employment categories were selected as both executives and employees are likely to have different attitudes towards the influence of certification on decisions related to hiring and training. A sample of HR executives provided data on both organizational policies associated with recruitment and training, as well as their individual perceptions of the influence of IT credentials in the recruitment and training process. In the second stage of data collection, a sample of incumbent IT employees from the same firms provided individual response data on the same issues.

Population and sample. The sample was chosen from a population of large firms. For the purpose of this study, a large firm was defined as having 500 or more employees. Firms were identified from the ReferenceUSA database, which contains more than 12 million listings of U.S. and global organizations with offices in the United States. Employing the criteria of 500 or more employees resulted in the selection of 3,330 firms. Since access to sampling frames of individual IT employees was unavailable, a letter of invitation to participate was sent to the Vice President (or equivalent title for the most senior manager of HR) to all 3,330 firms with 500 or more employees. The letter detailed the purpose of the study and the commitment required from employers and employees. A total of 161 executives responded to the invitation with 111 indicating that their firms had policies prohibiting their employees from participating in this type of research. The remaining 50 firms agreed to participate in the study. A self-administered questionnaire was mailed to HR executives along with instructions on procedures to recruit their firm's incumbent IT workers for the employee study. At the end of the data collection period, a total of 33 out of the 50 HR executives returned complete questionnaires representing a 66% response rate. A total of 245 complete employee surveys were received from IT workers at 13 of the 50 firms agreeing to participate (26% response rate). As we relied on the HR executives to distribute information regarding data collection to their IT workers, it was not possible to calculate the response rate for IT employees at the individual firm level.

Instrument. The HR executive instrument was a self-administered paper-and-pencil questionnaire containing open-ended items to determine the existing number of IT employees, the number hired in the past year, the number of current IT vacancies, items related to firm characteristics, and the perceived influence of industry-sponsored credentials on recruitment and training. The IT employee survey was a self-administered Internet based questionnaire designed to assess the perceptions of incumbent IT workers regarding the number and type of credentials held and their perceived influence on recruitment and training. Apart from the demographic information and firm characteristics, the same questions were asked of both HR executives and IT employees. The response items were measured on a five point Likert-type scale, anchored with strongly disagree to strongly agree. This measurement of the response items was based on a previous study of human resource management issues in the IT industry (Tu, Ragunathan, & Ragunathan, 2001). The content validity of the instrument was determined with review from an expert panel of five academics and five IT managers.

Data Analysis. Data analysis included descriptive statistics and t-tests to determine if significant differences in the perceptions of the benefits offered by industry-sponsored credentials exists between HR executives and IT employees, and between IT employees with and without industry-sponsored credentials.

Limitations. The principal limitation of this study is the low response rate obtained from both HR executives and IT employees. However, the response rate from those firms that did agree to participate is at or above the levels generally considered acceptable for this type of research. The generalizability of the results is limited to the degree to which other populations resemble the one studied. Furthermore, the lack of definition of the term IT employee may have caused confusion given the well-document difficulties in defining the boundaries of occupations within the IT industry. The sample was also limited to the degree to which the sampling frame provided correct information. Based on the number of returned surveys some concern can be leveled at the accuracy of the database on U.S. firms and HR executives used in the study.

Results

The 33 responding HR executives represented firms geographical dispersed across the U.S. The average number of IT employees in these firms was 423 employees with the mean number of current IT related vacancies 4.8 vacancies, and the mean number of IT employees hired over the past year was 50.7. According to the HR executives, it takes an average of 7.5 weeks to hire a new IT employee. One third of the 245 IT employees who participated in the study had either a four-year college degree or master's degree (34%). The largest reported education category for IT employees (38.5%; n = 94) was "some college or formal training" as the highest level of education. The attainment of a two-year associate's degree was indicated as the highest level of education by 22.1% (n = 54), a four-year college degree by 25.4% (n = 62), and a master's degree by 8.6% (n = 21). Almost seventy percent (69.4%, n = 170) of employee respondents indicated that they had earned one or more IT industry-sponsored credential. The 245 IT employee respondents in the study held a total of 406 IT credentials. The mean number of years employed in the IT industry was 7.3 years and the mean number of years employed in their current organization was 10.3 years.

Firm Characteristics. The perceptions of HR executives reveal that IT industry-sponsored credentials are becoming increasingly important to hiring decisions in many organizations. An overwhelming number of the HR executive respondents (84.8%, n = 28) pointed out that they notice an increasing number of applicants with industry-sponsored credentials responding to IT job advertisements. Employers (HR executives) also indicated that they were beginning to use IT industry-sponsored credentials as the qualification of choice for some of their IT positions. Over two thirds of the employer respondents (66.7%, n = 22) revealed that they specify IT certificates/credentials for certain IT positions. With a mean of 3.63 (on a five point scale), a large number of respondents (62.5%, n = 20) rated IT industry-sponsored credentials as either important or very important to their non-managerial level IT employee-hiring decisions. Nearly half the HR executives (42.4%, n = 14), either agreed or strongly agreed that their organizations require employees to maintain and update their IT related credentials. Finally, two-thirds of the responding HR executives (66.7%, n = 22) either agreed or strongly agreed that their organizations provided funding for credentials programs facilitated by an outside vendor.

Perceived Influence of Credentials on Recruitment and Training. Table 1 compares the perceptions of HR executives and IT employees on the benefits of credentials to recruitment and training.

Table 1. *Comparison of Perceptions of HR Executives and IT Employees*

Items	HR Executives		IT employees		
	Mean	%(Agree/strongly agree)	Mean	(Agree/strongly agree)	t-statistic
Benefits of credentials to Recruitment					
Identify an applicant's skill sets and knowledge more easily	3.82	78.8 (n=26)	3.58	64.1 (n=157)	-1.28
Make the recruitment process easier	3.45	54.6 (n=19)	3.60	61.5 (n=150)	0.88
Make recruitment cheaper	3.03	39.4 (n=13)	3.30	40.0 (n=98)	1.59
Make recruitment more time efficient	3.39	51.5 (n=17)	3.50	55.1 (n=135)	0.70
Benefits of credentials to training					
Reduce training costs for IT workers	3.41	53.2 (n=17)	3.18	43.6 (n=107)	-1.10
Reduce amount of time for new employees to learn their jobs	3.39	48.5 (n=16)	3.30	49.8 (n=122)	-.47
Improved IT employees' abilities to creatively solve problems	3.30	39.4 (n=13)	3.10	38.8 (n=95)	-.90
Improved theoretical understanding of IT products, networks, and customer needs	3.55	54.6 (n=18)	2.32	12.3 (n=30)	-7.23*
Increase the chance of success for new employees	3.52	48.5 (n=16)	3.64	62.0 (n=152)	.75

Note. The percentages and means represent those respondents who either agreed or strongly agreed to the above statements on a five-point scale. * Significant at $p < 0.05$.

Research question 1 examined if differences exist between the perception of HR executives and IT employees as to the influence of industry-sponsored credentials on the recruitment process. Both employers and employees perceive one of the main benefits of industry-sponsored credentials to be the identification of the applicants' job related skills and knowledge. Employees were stronger in their belief that industry sponsored credentials make the recruitment process easier, cheaper, and more time efficient than their HR executives. However, none of the differences between employers and employees related to recruitment were significant.

Research question 2 explored the differences between employers and employees in terms of the perceived benefits of credentials to training. Employers were more likely than IT employees to believe that industry-sponsored credentials reduce training costs, the time taken for new employees to learn the job, and improve problem solving abilities. However, the only significant difference was the perceived benefit that employees with IT credentials have improved theoretical understanding of IT products, networks, and customer needs.

Perceived Influence Between Employees With and Without IT Industry-sponsored Credentials. A series of independent-sample t-tests were conducted to answer research question 3 which explored differences between IT employees with and without industry-sponsored credentials on the perceived influence of industry-sponsored IT credentials on recruitment and training (see Table 2). An independent sample t-test comparing IT employees with no IT credentials to those with one or more IT credentials. The perception of the influence of credentials on recruitment produced a statistically significant difference ($t = -2.20$, $p = .01$) for the item "makes recruitment cheaper". A significant difference was also found ($t = -3.01$, $p = .002$) for the item "makes recruitment more time efficient". Significant differences were also found for two items related to training. The first item was" credentials improve theoretical understanding of IT products, networks, and customer needs" ($t = 2.40$, $p = .02$). The second item was "credentials increase the chance of success for new employees" ($t = -2.23$, $p = .02$).

Table 2. *Independent Samples t-tests*

Item	N	Mean	SD	t	df	Sig (two-tailed)
Identify knowledge/skills easier						
No credentials	75	3.52	1.03	-.65	243	.52
Credentials	170	3.61	1.02			
Makes recruitment easier						
No credentials	75	3.55	1.02	-.72	243	.48
Credentials	169	3.64	.98			
Makes recruitment cheaper						
No credentials	75	3.12	.90	-2.20	243	.01*
Credentials	170	3.42	1.01			
Makes recruitment more time efficient						
No credentials	75	3.24	.97	-3.01	243	.002*
Credentials	170	3.64	.92			
Reduce training costs for IT workers						
No credentials	75	3.17	1.13	-.02	243	.98
Credentials	170	3.18	1.15			
Reduce time for new employees to learn their jobs						
No credentials	75	3.13	1.06	-1.52	243	.13
Credentials	170	3.37	1.15			
Improve abilities to creatively solve problems						
No credentials	75	3.12	1.07	-.10	243	.92
Credentials	170	3.14	1.06			
Improve theoretical understanding						
No credentials	75	2.53	.99	2.40	243	.02*
Credentials	170	2.22	.90			
Increase the chance of success for new employees						
No credentials	75	3.44	.86	-2.23	241	.02*
Credentials	168	3.73	.94			

Note. * Statistically significant at $p < 0.05$.

Conclusion and Discussion

Certification and credentialing are noted as being hot topics for continuing education and training with Carnevale and Desrochers (2001) describing the challenges and opportunities they present to the delivery of IT training and development. Yet, the impact of industry-sponsored credentials remains largely unexamined, raising questions regarding their role and place in organizational decisions. This study provided an initial look at how both employers and employees view credentials. This research explored the perceptions of human resource executives and incumbent IT employees on the influence of IT industry-sponsored credentials in recruitment and training.

Examining the mean scores the findings from this study suggest that HR executives are more likely to agree than disagree that IT industry-sponsored credential assist in the recruitment process, especially in helping to identify skill sets required by applicants for IT positions. The majority of HR executives surveyed were more likely to agree than disagree that industry-sponsored credentials reduce training costs. However, the findings of this study show that very few significant difference exist between HR executives and IT employees in terms of the perceived influence of industry-sponsored credentials on recruitment and training. The only significant difference between the two groups (employers and employees) was a training related benefit that employees with IT credential have improved theoretical understanding of IT products, networks, and customer needs. This may suggest that employees with specific industry knowledge recognize the level of theoretical understanding that credentialed employees posses, whereas HR executives may believe that the product specific focus of credentials results in employees who lack a broader level of theoretical understanding of IT products, networks, and customer needs.

It is a reflection of the growth and acceptance of IT industry-sponsored credentials that almost 70% of the 245 employee respondents in this study have at least one IT-sponsored credential. In comparing employees with and those without industry-sponsored credentials we found a total of four significant differences, two related to recruitment and two related to training. The recent transition to many people earning credentials with little or no IT industry experience with expectations of finding immediate employment and a high salary has potentially created this situation where those IT employees with credentials view their perceived influence differently from employees without IT industry-sponsored credentials.

The perceptions of HR executives toward IT industry-sponsored credentials are seen as being important, as the attitude of senior ranking HR executives no doubt influence the policies and management practices of the firm. Credentials play an important role for defining the knowledge base and skill level for an industry. This then becomes a useful tool for human resource managers involved in recruiting IT employees and for HRD managers involved in making policies that support the required updating of their employees' credentials. The opinion that HR executives have towards industry-sponsored credentials has implications for educators, trainers, IT employees, and HR executives to share knowledge about various credentials, their individual reputations, and their influence on decisions related to recruitment and training and development. Based on the current findings it would be interesting to note where HR executives gain information about IT credentials. Given the shortage of research on IT industry-sponsored credentials it is possible that HR executive and employee attitudes are being shaped by the portrayal of IT credential in the media and in various trade and professional association publications.

The decision to hire, promote, or advance an IT employee is dependent on a complex array of factors that seek to match the knowledge, skills, and abilities of applicants to the vacancies or opportunities existing within the firm. The attitude of senior human resource executive, IT managers, IT staff, and applicants towards IT industry-sponsored credentials and their utility to the employee, the return to the organization, and responsibility of update are likely to be important issues. Much additional research on this issue is needed. The credentialing issue has created much interest for HRD as to the influence of an industry developed and sponsored credential of skill sets on decisions related to recruitment, training, and advancement. This study has focused on industry-sponsored credentials from one industry, yet it must be acknowledged that credentials are now a major issue in the education and training for many occupations and professions. However, much additional work remains to explore the differences in how employers and employees view credentials in terms of both initial entry and for the long-term development of necessary skills, knowledge, and abilities to ensure that an organization is able to realize the sustained competitive advantage represented in their human resources. The findings of this study suggest that a closer examination is needed to examine the perceived influence of credentials on specific aspects related to recruitment and training. For example, does the possession of a industry-sponsored credentials influence the selection of applicants invited to an interview, the type of pre-employment testing, and the examination of the applicants job background with contacts of references? Future research should also explore individual differences among IT employees with and without IT industry-sponsored credentials in terms of the amount and type of training participation as well as the resulting outcomes from training participation.

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The Role of Training and Development in Newspaper Recruitment Advertisements

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This project examined newspaper job advertisements to identify if references to training and development are increasingly listed as a benefit of employment. The study is framed by psychological contract theory and the broader level social exchange theory. Using well-validated content analysis techniques, the newspaper job advertisements for three major U.S. metropolitan areas were examined for a one-week period in 2001 and compared to the same one-week period from 1991.

Keywords: Recruitment Advertisements, Psychological Contract, Training

In a rapidly changing business environment it is noted that training and development activities assume greater importance for organizations (Ulrich & Lake, 1990) with several studies supporting the documented increasing organizational expenditure on human resource development (HRD) in recent years (ASTD, 2001). The emergence of the knowledge economy only serves to increase the importance of a well-skilled labor force that receives on-going training, development, and education in the face of the constant changes, which now define today's business environment. Based on figures from the organizations included in the 2001 Association for Training and Development (ASTD) State of Industry Report many U.S. companies are now spending over $1.2 million on training annually (p. 5). The report also indicates that at least 37 U.S. companies have an average expenditure on training of $33 million (p. 7). Goldstein (1993) noted that more than 90% of all private organizations have some type of systematic training program.

Problem Statement

Despite evidence on the increasing provision of training no research currently exists to determine the extent to which specific mention of training and development opportunities are made in newspaper job advertisements. Furthermore, it is not known if references to training and development may have changed over time, particularly in light of the new psychological contract between employers and employees in which additional features and benefits of a job are made available to prospective employees. If employers accept the new psychological contract they are likely to acknowledge this in their attitude, behavior, and communication with existing and potential employees.

One manifestation of this acknowledgment is the wording of recruitment advertisements. The significance of this acknowledgement and the value of this study examining changes in wording related to training in recruitment advertisements is that it supports the view that organizations increasingly recognize the strategic investment of training. This confirms the strategic role of human resources as a source of competitive advantage as advocated by the resource-based view of the firm (Wright, Dunford, & Snell, 2001).

Theoretical Framework

Two somewhat contradictory theoretical explanations are offered for the recent documented increase in organizational training expenditure. Martocchio and Baldwin (1997) suggested the rise in training, especially in large corporations, is the result from the on-going transition towards a more strategic approach to both human resource management and HRD. This viewpoint seems well supported in the largest, often times global, organizations who have developed strategic plans for every aspect of their business operation, including the development of their human resources. Yet, despite many calls for HRD to adopt a more strategic approach the literature suggests that an enormous amount of training expenditure produces no real competitive gain or strategic advantage for the firm (Swanson, 1995). Therefore, the adoption of a strategic approach to training seems to provide only a partial explanation for the increased role and investment in training.

Alternatively, it is argued that the increase in training and development investment can be attributed to the belief that training is viewed as a "right of membership and as a requisite for elevation to an elite position" (Scott & Meyer, 1991, p. 298). This is suggestive of a social desirability function of training. As firms compete for scarce

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human talent they are required to alter their perception of what the organization is required to offer in return. This is in keeping with the concept of the psychological contract literature, which examines the employment relationship as being embedded in the context of social exchange theory (Blau, 1964). The terms and conditions of this reciprocal exchange between employee and their organization are defined in both formal written contracts and within in the psychological contract (Rousseau, 1989). In 1998 Paul Sparrow, a professor of international human resource management in the United Kingdom, argued that the field of human resource development could learn much from this construct.

Psychological contracts describe an individual's beliefs about their employment relationship and are defined as "employees' perceptions of what they owe to their employers and what their employers owe to them" (Robinson, 1996, p. 574). The psychological contract guides employee attitudes about what they think they are entitled to receive, or should receive, because of real or perceived promises from their employing organization. Although, it is yet to be separated from more general studies of human resource management, there is evidence to suggest that HRD policies and practices also affect the psychological contract (Rousseau & Wade-Benzoni, 1994). As the psychological contract between employer and employee has expanded from satisfying immediate safety and compensation needs to a broader range of job challenge and career development issues the role of HRD has assumed greater importance. In other words, it is hypothesized that prospective employees will expect training opportunities in recruitment advertisements in return for their efforts related to the job and employers in turn recognize the need to provide training and development opportunities to recruit and retain human resources.

The psychological contract concept represents an extension of social exchange theory as the employment relationship is embedded in the context of this broader theory. Social exchange theory (Blau, 1964; Homans, 1961) describes the social relations among individuals and organizations where the relationship involves the exchange of valued items (Cook & Whitmeyer, 1992). Sinclair and Tetrick (1995) noted that this is one of the most commonly used frameworks for understanding individuals' work-related attitudes and behaviors. Social exchange theory suggests that self-interest drives people's social interactions. When this theory is extended to employee interactions with the organization in which they work or are considering working for, it implies that interactions between employees and the organization will continue as long as both parties derive benefits from the exchange. When employees perceive that the interactions are more beneficial than the costs, e.g., they are treated fairly or their learning needs are being met, it is more likely that the employee will honor their side of the relationship by behaving in ways that benefit the organization (Konovsky & Pugh, 1994).

When an individual employee perceives that the contributions they make obligate the organization to reciprocate with contributions, a psychological contract emerges. It should be noted that psychological contracts are defined by their perceptual and individual nature, making them distinct from both formal written contracts and implied contracts (Robinson & Wolfe-Morrison, 1995). Furthermore, psychological contracts are highly subjective (Guzzo & Noonan, 1994). If the employee perceives their contract to have been violated by the organization, the result may be a lower level of commitment from the employee to their employing organization (Burack & Singh, 1995). Empirical support for this proposition was found in a longitudinal study of master of business administration (MBA) students who were tracked over the first years of their employment following graduation (Robinson, Kraatz, & Rousseau, 1994).

Existing research supports the idea that employees may perceive a psychological contract violation when the organization does not appear to fulfill important obligations (Lewis-McClear & Taylor, 1997). Harrell-Cook and Ferris (1997) noted that organizations face competing pressures from stockholders for short-term financial performance, which may limit the extent of HR investments such as training and development. These authors noted that "if employees perceive that they are slighted, they may conclude that they are receiving unfair treatment by the organization" (p. 332). Extending this argument, it maybe that applicants who do not see prominent mention of training and development in job recruitment advertisements may direct their job search efforts elsewhere.
Schein (1980) argued that psychological contracts act as powerful determinants of organizational behavior. Human resource management practices are acknowledged as affecting the psychological contract (Lucero & Allen, 1994; McLean-Parks & Schmedemann, 1994). Examples of how HR practices shape the psychological contract are provided by Rousseau and Wade-Benzoni (1994):

> How jobs are advertised ("great advancement potential," "opportunity for salary growth"), the way the organization is portrayed during recruitment interviews ("this organization provides plenty of training"), comments made in performance appraisal review ("keep up the good work and we will move you up"), and compensation systems (wages based on rank or time on the job), all send strong messages to individuals regarding what the organization expects of them and what they can expect in return (p.465).

Given the above examples it is not surprising that Rousseau and Greller (1994) stated "a major function of human resource management is to foster an appropriate psychological contract" (p. 385).

More recently, it has also been suggested that HRD managers have a role in defining and maintaining employees' psychological contracts (Sparrow, 1998). Training is viewed as a human resource practice that can be controlled or managed to elicit a desired set of unwritten reciprocal attitudes and behaviors. Desired work-related attitudes include job involvement, motivation, and organizational commitment. In return for demonstrations of desired work-related attitudes and behaviors employees have altered their view of many HR practices, including HRD. Many employees now view training as a benefit of employment as it is commonly regarded as a means for advancement (Ashenfelter & LaLonde, 1998). This could suggest that employees seek employment in firms that offer and promote training and development opportunities. At the same time, organizations involved in recruitment desire to have a large applicant pool of not only qualified applicants but of future employees likely to be highly committed and accepting of the need for lifelong learning.

This argument is supported by Finegold (1998) in his reflection of changes in employee loyalty. He suggested that historically an organization was able to offer job security in return for employee effort. However, times have changed as evidenced by repeated rounds of re-engineering, restructuring, downsizing, and outsourcing. The organization, although no longer able to offer employment security, promises to increase the employability of its workers by investing in their continuous skill development and provides opportunities and rewards for using these skills (Finegold, 1998). Additional support for this proposition was found in the recent content analysis study of the new employment relationship in that it is now considered the "employers' responsibility to provide training, education, and skill development opportunities and the employees' responsibility to take advantage of those opportunities to develop and maintain their skills" (Roehling, Cavanaugh, Moynihan, & Boswell, 2000, p. 312-313).

Extending this argument to the current study, it is suggested that firms now place greater emphasis on promoting training and development opportunities to assist in recruiting new employees. This is likely to be a key feature of the job interview and initial orientation training to promote the formation of desired psychological contract. This emphasis on training and development as a benefit of employment is also likely to be present in formal communication from the organization in order to attract applicants for vacant positions, such as recruitment advertisements in newspapers.

Research Question

The core research question guiding this study was: are references to training and development in newspaper job announcements more likely to be seen in 2001 than they were in 1991? More specifically, it was thought that based on existing literature and the changing nature of the psychological contract that the percentage of job advertisements referencing training and development would be higher in 2001 as compared to the same time period ten years ago. This was tested with the following two research hypotheses.

> *Hypothesis 1: The percentage of newspaper advertisements referencing training and development will be greater for one-week in 2001 as compared to the same time period in 1991.*
>
> *Hypothesis 2: The proportion of advertisements referencing training and development for one week in 2001 will be significantly different as compared to the proportion from the same time period in 1991.*

Method

To explore if firms are more likely to mention of training and development opportunities we used newspaper recruitment advertisements to examine the number of references made to training and development. It was thought that based on the existing literature that firms may view announcements of training and development in recruitment advertisements as a way to demonstrate their support and commitment towards individual development, improved organizational performance, as well as reflecting the recognition that training is a socially desirable aspect of the job that employees now view as a right of employment.

Previous research on newspaper job announcements found that opportunities for advancement have traditionally been ranked high among job attributes by job seekers (Jurgensen, 1978). Many job postings now provide more detailed information on the amount and type of training applicants can anticipate in addition to details on the job characteristics, salary, and benefits. This supports the findings of Barber and Roehling (1993) that applicants find job postings with more detailed information more attractive than advertisements that only provide sketchy details of the job. Existing studies have examined how newspaper job advertisements have changed over time to reflect the

changing job duties of HR managers (Redman & Mathews, 1995) and in the desired specialty field of physicians that hospitals seek (Seifer, Troupin, & Rubenfeld, 1996). Yet, no existing research has examined the wording of recruitment advertisements in relation to references of employer provided training and development.

This research study used a content analysis methodology to gather frequency and percentage data to examine if references to training in newspaper job announcements occur more frequent in 2001 than in 1991. The well-supported content analysis technique of Kassarjian (1977) was used to examine the text in newspaper job advertisements. Content analysis can be defined as "an observational research method that is used to systematically evaluate the symbolic content of all forms of communication" (Kolbe & Burnett, 1991, p. 243). It is noted as "being a scientific, objective, systematic, quantitative, and generalizable description of communication content" (Kassarjian, p.10). This method of research inquiry is well established in marketing, social psychology, political science, and consumer research yet no evidence exists within the HRD literature. Despite the existence of multiple options available for an employer seeking to promote a vacant position the newspaper advertisement remains the most commonly used method to advertise job opening (Schreier, 1983). To determine if references to training are more prevalent in 2001 than ten years ago we examined newspaper job advertisements from three major U.S. cities for a one-week period in 2001 and compared this to the same newspaper for the same week in 1991. The ten-year time period was selected as previous content analysis studies of related to changing aspects of employment have used this time horizon (Redman & Mathews, 1995). Additionally, it was thought that this would be an adequate time period in which to notice changing trends that have mirrored changes in the psychological contract (Sparrow, 1998).

Sample

The procedure for selecting the cities was designed to reduce a potential regional influence. The analysis was limited to newspapers from U.S. major cities. Recent U.S. Census (2000) data was used to identify cities having a population of or greater than 1,000,000 in their Metropolitan Statistical Area (a geographic entity defined by the Office of Management and Budget for use by federal statistical agencies, based on the concept of a core area with a large population nucleus, plus adjacent communities having a high degree of economic and social integration with that core" http://factfinder.census.gov/home/en/whatsinaff.html).

To avoid over-representation of East Coast cities, the list of all 49 MSA's meeting the population requirement of 1,000,000 or more residents were divided into three categories based on their respective time zone. The cities in the Mountain and Pacific time zone were combined due to the small number of MSA's within the population parameters in the Mountain time zone. The ten largest cities in each of the three regions were listed (a total of 30 MSA's equally dispersed on 10 each on the the East Coast, Mid-section, and West Coast). A random number from one to ten was selected to produce one city from each region. The three selected cities were Atlanta, Minneapolis, and San Francisco. The reason that the study focused on only three cities is because of the quantity of data that one week of newspaper advertisements from both 1991 and 2001 generates. This selection procedure for the sample was thought to reduce any potential regional bias in selecting cities from which to examine newspaper recruitment advertisements. The largest daily newspaper in each of the three cities was selected. Initial analysis revealed that the vast majority of recruitment advertisements appear on a single day of the week, Sunday. Therefore, the final sample was all newspaper job recruitment advertisements from the Sunday edition of newspapers from three large U.S. cities for the same one-week in 1991 and 2001. This resulted in a total of 6,553 advertisements for 1991 and 5,249 for 2001.

Procedures

The newspaper job announcements were read and classified by the absence or presence of training opportunities mentioned as a feature of the advertisement text. Training was defined as reference to one or more of the following terms: training, development opportunities, career development opportunities, tuition reimbursement policies, CEU assistance, and organization supported advancement opportunities. All newspapers from 1991 are now contained only in microfilm format. All pages with job advertisements were printed directly from the microfilm reader. The advertisements from 2001 newspapers were cut directly from the purchased editions. Two copies of each advertisement were made with both researchers reading and highlighting each reference to HRD. This procedure provided an easily identifiable mark to assist in the inter-rater reliability process. Using this method an inter-rater reliability of 98.5% was achieved. A second reliability measure was conducted four weeks after the first analysis. Each researcher re-analyzed a random sample of 200 advertisements for a test-retest reliability measure. As detailed

in Table 1 all of the reliability coefficients exceed the .80 coefficient cutoff points suggested for content analysis (Kassarjian, 1977).

Table 1. *Reliability Coefficients*

Classification Category	Inter-rater Reliability	Test-re-test Coefficients
Advertisements with reference to training	.985	.979

Results

Table 2 presents the total number of advertisements for the week for the two years under investigation, the frequency of advertisements referencing training, and the percentage of total advertisements that referenced training. The total frequency of newspaper job advertisements in the three selected cities for 1991 was 6,553 advertisements and 5,249 for 2001, representing a reduction of 1304 (19.89%) job advertisements over the one-week period for the two years under investigation. The number of newspaper job advertisements with reference to training in the three selected cities for 1991 was 445 and 408 for 2001.

Table 2. *Frequency and Percentages of Advertisements with References to Training*

Year	Total number advertisements Atlanta	Total number advertisements Minneapolis	Total number advertisements San Francisco	Advertisements with reference to training (all cities)	Percentage of advertisements with reference to training
1991	2447	2928	1178	445	6.79
2001	1546	3008	695	408	7.77

While the number of references to training actually decreased the findings support hypothesis 1 in that the percentage of job advertisements referencing HRD is higher in 2001 as compared to 1991. Approximately 7.77% of advertisements in 2001 contained a reference to HRD compared to 6.79% in 1991 despite the overall reduction in the number of job advertisements for the week under investigation.

To examine the significance of the difference between the proportion of advertisements referencing training and development in 2001 and 1991 a comparison test for two proportions was performed for each city. This test considered variation in a categorical variable and two categories. The categorical variable was the yes or no response to a reference to training and development in an advertisement and the two categories were the years 1991 and 2001. Given the large sample (number of total advertisements) the *Z*-score for the test statistic was calculated for the proportion of advertisements with reference to training for each of the three cities in both 1991 and 2001. The formula for this equation is presented below:

$$Z = \frac{\left(\hat{p}_{1991} - \hat{p}_{2001}\right) - 0}{se\left(\hat{p}_{1991} - \hat{p}_{2001}\right)}$$

Results shown in Table 3 indicate that the proportion of advertisements referencing training in 1991 and 2001 is significantly different in two of the three cities. More specifically, a significant difference in the proportion of advertisements with reference to training as compared to all job advertisements was found in Atlanta and San Francisco but not Minneapolis. This offers partial support for hypothesis 2.

Table 3. *Z-Scores of Proportions of Advertisements Referencing Training Opportunities 1991-2001*

	Atlanta	Minneapolis	San Francisco
Z-score of proportion	-2.63* ($p < .001$)	1.86 ($p = .615$)	-4.55* ($p < .001$)

* $p < .001$

Discussion

Existing literature supports that there appears to be wide spread agreement that organizations now recognize the value of providing training opportunities. Existing research also has suggested that employees are increasingly seeking growth and educational opportunities as a feature of their work in response to the changing psychological contract, which has placed more emphasis on employees being more self-directed in gaining the skills, knowledge, and abilities needed for not only their current job but also future jobs (Roehling et al., 2000). Yet, no research has investigated if employers are increasingly offering training as benefit of employment in their communication with potential job applicants. This research study sought to address this situation by examining the text of newspaper advertisements to determine if references to training and development are more common in 2001 than in 1991.

Results from this study showed that despite a reduction in the overall number of job advertisements placed in the newspapers of three large U.S. cities the percentage of advertisements with reference to training has increased. The reasons for the overall drop in the both the number of advertisements and the numbers with reference to training is no doubt due to a wide variety of factors including the both the local and national labor market. Furthermore, the emergence of the Internet as a recruitment method may have reduced the number of advertisements placed in newspapers. It was for this reason that the research hypotheses examined the percentage and proportion of advertisements referencing training rather than the frequency.

The proportion of advertisements referencing training and development in 2001 was found to be significantly different that the proportion referencing training and development a decade earlier in two of the three cities we examined. We are unable to offer an explanation for why one city (Minneapolis) would not have produced a significant difference in proportion in the number of advertisements that reference training. This is perhaps a result of the type of jobs advertised for in this MSA. In conclusion, both research hypotheses in this study were supported or partly supported suggesting that employers' are more likely to make reference to training as an aspect of their communication with potential applicants for positions advertised in the newspapers three selected major U.S. cities in 2001 than they were a decade earlier.

We believe that trends in recruitment advertising are an excellent way to track changes in how both employers and employees view the importance of training within the context of the changing psychological contract. More detailed analysis of the advertisement text is needed to fully understand the context of how employers' position training and development to potential job applicants. Additional future research should investigate variables related to the position or occupation being advertised to determine if training and development is more likely to be offered with certain occupations. Similarly, there may well be an industry affect so efforts to categorize the organizations placing advertisements into industry clusters would provide additional information on this topic. Finally, future research on references to training and development in newspaper advertisements should examine if the findings of this study are consistent in other countries. A potential international extension of this research would be to replicate this study in a sample of cities and countries to determine if the increased reference to training and development in newspaper advertisements is confined to the United States or if it reflects a global trend in response to the acknowledgement of both employers' and employees' to the growing importance of training and development for organizations and individuals.

Implications from the findings of this study suggest that HRD practitioners could play a greater role in the recruitment process. More specifically, HRD professionals should work closely with HR managers and recruiters to produce effective recruitment announcements that highlight the organizational commitment to development human resources. Additional research is needed to determine what reference to training and development job applicants are expecting to see in recruitment advertisements and if this influences the decision to apply.

The results from this research suggest that employers' are increasing the frequency with which they reference training in job advertisements, which may influence the expectation that employees' (both current and newly hired) have for both access to training and the amount of participation in training and development. This expectation that employees' have towards training has implication for how HRD is approached by the organization. Perhaps employee attitudes towards their expectations and the reality of HRD support from the firms influences work-place attitudes, such as organizational commitment, job satisfaction, and turnover intentions, as well as measures of individual performance. HRD professionals should continue their efforts to develop and deliver training, career development, and organization development for individual and organizational learning so that future replication studies of this research finds that the trend towards increased references to training and development in job advertisements continues.

The findings of this research should be interpreted with recognition of the limitation of this study. The primary limitation is the examination of only one day from three large U.S. cities. However, the quantity of data and time required to examine each advertisement impede attempts to get a more representative sample in terms of the number of days and cities from which to examine advertisements. As such the generalizability of the results from this study are limited to the degree to which other populations resemble the one studied. An additional limitation of the study was the lack of definition of the term training. In an attempt to be unique and creative in their recruitment efforts organizations use a variety of words to reflect their commitment of employee development. These words and phrases do not always confirm to the agreed upon definitions of HRD researchers. Future research should consider using existing definitions of training and HRD to generate words from which to analyze the text of newspaper advertisements.

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